

## Remarks

Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested.

In the pending Final Office Action, the Examiner rejected claims 3-4, under 35 U.S.C. §103(a), as allegedly being unpatentable over Kitano '797 (U.S. Patent No. 5,779,797) in view of Tanaka '229 (U.S. Patent No. 5,492,229).

By this Amendment, no claims have been amended and no new matter has been added. Accordingly, claims 3-4 are currently presented for examination of which claim 3 is the sole independent claim.

Applicants traverse the §103(a) rejections for the following reasons.

### I. Rejections Under §103(a).

As noted above, independent claim 3 now positively recites, *inter alia*, a support frame, three support arms protruding from the support frame towards a center so as to form an intervening spacing with each other, and support projections projecting upwards from each support arm. Claim 3 also positively recites the support arms are arranged so as to form an angle of 120° with each other about the center, *and positions of all the support projections can be preset so that they are positioned around a same circle about the center point, within a region where a radial distance from the center is defined by 85 to 99.5% of the wafer radius.*

These features are amply supported by the embodiments disclosed in the written description. By way of example, the disclosed embodiments provide a heat treatment jig and heat treatment method for wafers in which the free depth of dislocation generated from the pin points is maintained deeper than a device formation region, and the widest slip-free region is obtained on the wafer surface. The disclosed embodiments further provide that all the

support positions of the silicon wafer are arranged forming angles of 120° about the center, and are also arranged in a region where a radial distance from the center is defined by 85 to 99.5% of the wafer radius. With this arrangement, the length of slip dislocations caused by contact with the support projection can be suppressed so that the dislocation only grows to a region not affecting the device formation region of the wafer surface. Accordingly, by reducing the generation of slip dislocation in the device formation region, reduction of wafer yields can be effectively prevented.

In contrast to the Examiner's contentions, Applicants submit that none of the asserted references, whether taken alone or in reasonable combination, suggest each and every element of claim 3 including, for example, the features noted above. In particular, the primary reference, Kitano '797, teaches supporting a wafer at three positions where stress generated by the wafer weight is minimized. Kitano '797 shows experimentally that the three support positions are two-thirds, 66.7%, of the wafer radius.

The secondary reference, Tanaka '229, discloses selecting four support positions based on minimizing slip due to wafer weight. The four support positions are at 50-90% of the wafer radius.

It follows that none of the references, whether taken alone or combined, are capable of teaching the claimed combination of features. That is, Kitano '797 specifically teaches three support positions at 66.7% of the wafer radius, while Tanaka '229 specifically teaches four support positions at 50-90% of the wafer radius. Not even the combination of the two references suggest three support positions at 85 to 99.5% of the wafer radius, as required by claim 3.

Moreover, there is clearly no suggestion of combining these references that are directed to two specific orientations. Equally notable, artisans of ordinary skill will readily appreciate that, based on the entire teachings of both references, simply modifying the Kitano '797 configuration by employing the Tanaka '229 configuration with one less support at 90%

wafer radius is technically not feasible – unless relying on the present invention and disclosure, which is clearly hindsight.

Thus, for at least these reasons, Applicants submit that claim 3 is clearly patentable over the asserted references. And, because claims 4 depends from claim 3, claim 4 is patentable at least by virtue of dependency as well as for its additional recitations.

## Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

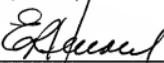
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

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Respectfully Submitted,

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